

What is claimed:

1. A method of preventing, reducing, or inhibiting invasiveness and metastasis of tumor cells in a subject comprising administering to the subject a therapeutically effective amount of the B-subunit of Shiga toxin.

2. The method of claim 1, wherein the tumor cells are colon tumor cells.

3. The method of claim 1, wherein the tumor cells are derived from a tissue selected from the group consisting of: colon, lung, brain, skin, ovary, pancreas, liver, stomach, bladder, bone, testicle, uterus, adipose tissue, throat, kidney, tongue, pituitary gland, thyroid, lymphoid tissue, eye, and cervix.

4. The method of any one of claims 1-3, wherein the B-subunit of Shiga toxin is Stx1B.

5. The method of any one of claims 1-3, wherein the B-subunit of Shiga toxin is Stx2B.

6. The method of any one of claims 1-5, wherein the therapeutically effective amount of the B-subunit of shiga toxin of administered prior to the onset of metastasis by the tumor cells.

7. The method of any one of claims 1-5, wherein the therapeutically effective amount of the B-subunit of shiga toxin is administered subsequent to the onset of metastasis by the tumor cells.

8. The method of any one of claims 1-7, further comprising administering to the subject a therapeutically effective amount of radiation.

9. The method of any one of claims 1-8, further comprising administering to the subject a therapeutically effective amount of at least one chemotherapeutic agent.

10. The method of any one of claims 1-9, wherein the tumor cells produce Gb₃.

11. The method of any one of claims 1-10, wherein the subject is a human.

12. The method of any one of claims 1-11, wherein the B subunit of Shiga toxin is
5 conjugated to a therapeutic moiety.

13. A method of identifying a compound capable of preventing, reducing, or
inhibiting tumor cell invasiveness and metastasis comprising:

- 10 a) contacting a cell that produces Gb₃ with a test compound; and
 b) measuring Gb₃ production or activity by the cell,

wherein a compound which reduces or inhibits Gb₃ production by the tumor cells is
identified as a compound capable of preventing, reducing, or inhibiting tumor cell metastasis.

14. The method of claim 13, wherein measuring Gb₃ production comprises
15 measuring the level Gb₃ Synthetase mRNA.

15. The method of claim 14, wherein the Gb₃ Synthetase mRNA level is measured
using a method selected from the group consisting of: Northern blotting, RNase protection,
primer extension, and RT-PCR.

20 16. The method of claim 13, wherein measuring Gb₃ expression comprises
measuring the level Gb₃ lipid.

25 17. The method of claim 16, wherein the Gb₃ lipid level is measured using a
method selected from the group consisting of: chromatography, ELISA, RIA, FACS, and
immunocytochemistry.